

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of manufacturing a semiconductor device including at least a thin film transistor, said method comprising the steps of:

forming an amorphous semiconductor film comprising silicon over a substrate having an insulating surface;

providing the amorphous semiconductor film with an element which promotes crystallization of the amorphous semiconductor film;

crystallizing the amorphous semiconductor film by a first heat treatment to form a crystalline semiconductor film;

introducing an impurity element belonging to Group 15 into a first portion of the crystalline semiconductor film by using a mask while a second portion of the crystalline semiconductor film below the mask is not provided with the impurity element;

wherein the first and second portions of the crystalline semiconductor film are in contact with the insulating surface over the substrate;

performing a second heat treatment for gettering so that the element contained in the second portion is moved to the first portion in a direction parallel to the insulating surface; and

patterning the crystallized semiconductor film to form a crystalline semiconductor island in the second portion thereby removing the first portion of the crystalline semiconductor film;

forming an active layer of the thin film transistor using the crystalline semiconductor island,

wherein the second heat treatment is performed in a temperature range not exceeding a glass transition point of the substrate.

2. (Previously Presented) A method according to claim 1, wherein the crystalline semiconductor film has grain boundaries.
3. (Previously Presented) A method according to claim 1, wherein the second heat treatment is performed in the temperature range from 500 to 700°C.
4. (Original) A method according to claim 1, wherein the substrate is a glass substrate.
5. (Previously Presented) A method according to claim 1, wherein the second heat treatment is furnace annealing.
6. (Previously Presented) A method according to claim 1, wherein the amorphous semiconductor film comprises germanium.
7. (Previously Presented) A method according to claim 1, wherein the element which promotes crystallization is at least one element selected from the group of elements consisting of Ni, Co, Fe, Pd, Pt, Cu and Au.
8. (Original) A method according to claim 1, wherein the impurity element belonging to Group 15 is at least one element selected from the group of elements consisting of P, N, As, Sb, and Bi.
9. (Currently Amended) A method of manufacturing a semiconductor device including at least a thin film transistor, said method comprising the steps of:
forming an amorphous semiconductor film comprising silicon over a substrate having an insulating surface;

selectively providing a first portion of the amorphous semiconductor film with an element which promotes crystallization of the amorphous semiconductor film;

crystallizing the amorphous semiconductor film by a first heat treatment to form a crystalline semiconductor film, so that a crystallization proceeds from the first portion in a lateral direction to the insulating surface;

introducing an impurity element belonging to Group 15 into a second portion of the crystalline semiconductor film by using a mask while a third portion of the crystalline semiconductor film below the mask is not provided with the impurity element;

wherein the second and third portions of the crystalline semiconductor film are in contact with the insulating surface over the substrate;

performing a second heat treatment for gettering so that the element contained in the third portion is moved to the second portion in a lateral direction to the insulating surface; and

patterning the crystalline semiconductor film to form a crystalline semiconductor island in the third portion thereby removing the second portion of the crystalline semiconductor film;

forming an active layer of the thin film transistor using the crystalline semiconductor island,

wherein the second heat treatment is performed in a temperature range not exceeding a glass transition point of the substrate.

10. (Previously Presented) A method according to claim 9, wherein the crystalline semiconductor film has grain boundaries.

11. (Previously Presented) A method according to claim 9, wherein the second heat treatment is performed in the temperature range from 500 to 700°C.

12. (Original) A method according to claim 9, wherein the substrate is a glass substrate.

13. (Previously Presented) A method according to claim 9, wherein the second heat treatment is furnace annealing.

14. (Previously Presented) A method according to claim 9, wherein the amorphous semiconductor film comprises germanium.

15. (Previously Presented) A method according to claim 9, wherein the element which promotes crystallization is at least one element selected from the group of elements consisting of Ni, Co, Fe, Pd, Pt, Cu and Au.

16. (Original) A method according to claim 9, wherein the impurity element belonging to Group 15 is at least one element selected from the group of elements consisting of P, N, As, Sb, and Bi.

17. (Currently Amended) A method of manufacturing a semiconductor device including at least a thin film transistor, said method comprising the steps of:

forming an amorphous semiconductor film comprising silicon over a substrate having an insulating surface;

providing the amorphous semiconductor film with an element which promotes crystallization of the amorphous semiconductor film;

crystallizing the amorphous semiconductor film by a first heat treatment to form a crystalline semiconductor film;

irradiating a laser light or an intense light to the crystalline semiconductor film;

introducing an impurity element belonging to Group 15 into a first portion of the crystalline semiconductor film by using a mask after the irradiating step, while a second portion of the crystalline semiconductor film below the mask is not provided with the impurity element;

wherein the first and second portions of the crystalline semiconductor film are in contact with the insulating surface over the substrate;

performing a second heat treatment for gettering so that the element contained in the second portion is moved to the first portion in a lateral direction to the insulating surface;
patterning the crystalline semiconductor film to form a crystalline semiconductor island in the second portion thereby removing the ~~first~~^{second} portion of the crystalline semiconductor film;
forming an active layer of the thin film transistor using the crystalline semiconductor island,
wherein the second heat treatment is performed in a temperature range not exceeding a glass transition point of the substrate.

18. (Previously Presented) A method according to claim 17, wherein the crystalline semiconductor film has grain boundaries.

19. (Previously Presented) A method according to claim 17, wherein the second heat treatment is performed in the temperature range from 500 to 700°C.

20. (Original) A method according to claim 17, wherein the substrate is a glass substrate.

21. (Previously Presented) A method according to claim 17, wherein the second heat treatment is furnace annealing.

22. (Previously Presented) A method according to claim 17, wherein the amorphous semiconductor film comprises germanium.

23. (Previously Presented) A method according to claim 17, wherein the element which promotes crystallization is at least one element selected from the group of elements consisting of Ni, Co, Fe, Pd, Pt, Cu and Au.

24. (Original) A method according to claim 17, wherein the impurity element belonging to Group 15 is at least one element selected from the group of elements consisting of P, N, As, Sb, and Bi.

25. (Currently Amended) A method of manufacturing a semiconductor device including at least a thin film transistor, said method comprising the steps of:

forming an amorphous semiconductor film comprising silicon over a substrate having an insulating surface;

selectively providing a first portion of the amorphous semiconductor film with an element which promotes crystallization of the amorphous semiconductor film;

crystallizing the amorphous semiconductor film by a first heat treatment to form a crystalline semiconductor film, so that a crystallization proceeds from the first portion of the amorphous semiconductor film in a lateral direction to the insulating surface;

irradiating a laser light or an intense light to the crystalline semiconductor film;

introducing an impurity element belonging to Group 15 into a second portion of the crystalline semiconductor film by using a mask after the irradiating step, while a third portion of the crystalline semiconductor film below the mask is not introduced with the impurity element;

wherein the second and third portions of the crystalline semiconductor film are in contact with the insulating surface over the substrate;

performing a second heat treatment for gettering so that the element contained in the third portion is moved to the second portion in a lateral direction to the insulating surface;

patterning the crystalline semiconductor film to form a crystalline semiconductor island in the third portion thereby removing the second portion of the crystalline semiconductor film;

forming an active layer of the thin film transistor using the crystalline semiconductor island,

wherein the second heat treatment is performed in the temperature range not exceeding a glass transition point of the substrate.

26. (Previously Presented) A method according to claim 25, wherein the crystalline semiconductor film has grain boundaries.

27. (Previously Presented) A method according to claim 25, wherein the second heat treatment is performed in the temperature range from 500 to 700°C.

28. (Original) A method according to claim 25, wherein the substrate is a glass substrate.

29. (Previously Presented) A method according to claim 25, wherein the second heat treatment is furnace annealing.

30. (Previously Presented) A method according to claim 25, wherein amorphous semiconductor film comprises germanium.

31. (Previously Presented) A method according to claim 25, wherein the element which promotes crystallization is at least one element selected from the group of elements consisting of Ni, Co, Fe, Pd, Pt, Cu and Au.

32. (Original) A method according to claim 25, wherein the impurity element belonging to Group 15 is at least one element selected from the group of elements consisting of P, N, As, Sb, and Bi.

33. (Previously Presented) A method according to claim 1, wherein said step of introducing the impurity element belonging to Group 15 is performed by plasma doping.

34. (Previously Presented) A method according to claim 8, wherein a dose of said phosphorous (P) is set in a range from 1×10^{13} ions/cm² to 5×10^{14} ions/cm².

35. (Previously Presented) A method according to claim 8, wherein a concentration of said phosphorous is a digit higher than a concentration of said element which promotes crystallization.

36. (Previously Presented) A method according to claim 9, wherein said step of introducing the impurity element belonging to Group 15 is performed by plasma doping.

37. (Previously Presented) A method according to claim 16, wherein a dose of said phosphorous is set in a range from 1×10^{13} ions/cm² to 5×10^{14} ions/cm².

38. (Previously Presented) A method according to claim 16, wherein a concentration of said phosphorous is a digit higher than a concentration of said element which promotes crystallization.

39. (Previously Presented) A method according to claim 17, wherein said step of introducing the impurity element belonging to Group 15 is performed by plasma doping.

40. (Previously Presented) A method according to claim 24, wherein a dose of said phosphorous is set in a range from 1×10^{13} ions/cm² to 5×10^{14} ions/cm².

41. (Previously Presented) A method according to claim 24, wherein a concentration of said phosphorus is a digit higher than a concentration of said element which promotes crystallization.

42. (Previously Presented) A method according to claim 25, wherein said step of introducing the impurity element belonging to Group 15 is performed by plasma doping.

43. (Previously Presented) A method according to claim 32, wherein a dose of said phosphorous is set in a range from 1×10^{13} ions/cm² to 5×10^{14} ions/cm².

44. (Previously Presented) A method according to claim 32, wherein a concentration of said phosphorous is a digit higher than a concentration of said element which promotes crystallization.

45. (Currently Amended) A method of manufacturing a semiconductor device including at least a thin film transistor, said method comprising the steps of:

forming an amorphous semiconductor film comprising silicon over a substrate having an insulating surface;

providing the amorphous semiconductor film with an element which promotes crystallization of the amorphous semiconductor film;

crystallizing the amorphous semiconductor film by a first heat treatment to form a crystalline semiconductor film;

introducing an impurity element belonging to Group 15 into a first portion of the crystalline semiconductor film by using a mask while a second portion of the crystalline semiconductor film below the mask is not provided with the impurity element;

wherein the first and second portions of the crystalline semiconductor film are in contact with the insulating surface over the substrate;

performing a second heat treatment for gettering so that the element contained in the second portion is moved to the first portion in a lateral direction to the insulating surface;

patterning the crystalline semiconductor film to form a crystalline semiconductor island in the second portion thereby removing the first portion of the crystalline semiconductor film;

forming a gate insulating film over the crystalline semiconductor island;

forming at least one gate electrode comprising a metal on the gate insulating film;

doping an impurity element into at least a second portion of the crystalline semiconductor island to form a lightly doped drain region; and

forming at least a source region and a drain region by doping an impurity element into third portions of the crystalline semiconductor island,

wherein the second heat treatment is performed in a temperature range not exceeding a glass transition point of the substrate.

46. (Previously Presented) A method according to claim 45, wherein the second heat treatment is performed in the temperature range from 500 to 700°C.

47. (Previously Presented) A method according to claim 45, wherein the element which promotes crystallization is at least one element selected from the group of elements consisting of Ni, Co, Fe, Pd, Pt, Cu and Au.

48. (Previously Presented) A method according to claim 45, wherein the impurity element belonging to Group 15 is at least one element selected from the group of elements consisting of P, N, As, Sb, and Bi.

49. (Previously Presented) A method according to claim 45, wherein said step of introducing the impurity element belonging to Group 15 is performed by plasma doping.

50. (Previously Presented) A method according to claim 48, wherein a dose of said phosphorus is set in a range from 1×10^{13} ions/cm² to 5×10^{14} ions/cm².

51. (Previously Presented) A method according to claim 48, wherein a concentration of said phosphorous is a digit higher than a concentration of said element which promotes crystallization.

52. (Currently Amended) A method of manufacturing a semiconductor device including at least a thin film transistor, said method comprising the steps of:

forming an amorphous semiconductor film comprising silicon over a substrate having an insulating surface;

providing the amorphous semiconductor film with an element which promotes crystallization of the amorphous semiconductor film;

crystallizing the amorphous semiconductor film by a first heat treatment to form a crystalline semiconductor film;

introducing an impurity element belonging to Group 15 into a first portion of the crystalline semiconductor film by using a mask while a second portion of the crystalline semiconductor film below the mask is not provided with the impurity element;

performing a second heat treatment for gettering so that the element contained in the second portion is moved to the first portion in a lateral direction to the insulating surface;

patterning the crystalline semiconductor film to form a crystalline semiconductor island in the second portion thereby removing the first portion of the crystalline semiconductor film;

forming a gate insulating film over the crystalline semiconductor island;

forming at least one gate electrode comprising a metal on the gate insulating film;

doping an impurity element into at least a second portion of the crystalline semiconductor island to form a lightly doped drain region;

forming at least a source region and a drain region by doping an impurity element into third portions of the crystalline semiconductor island;

forming an interlayer insulating film comprising silicon over the gate electrode;

forming an interlayer insulating film comprising an organic resin film over the interlayer insulating film; and

forming a pixel electrode that is electrically connected to the source region or drain region through a contact hole over the interlayer film;

wherein the second heat treatment is performed in a temperature range not exceeding a glass transition point of the substrate.

53. (Previously Presented) A method according to claim 52, wherein the second heat treatment is performed in the temperature range from 500 to 700°C.

54. (Previously Presented) A method according to claim 52, wherein the amorphous semiconductor film comprises germanium.

55. (Previously Presented) A method according to claim 52, wherein the element which promotes crystallization is at least one element selected from the group of elements consisting of Ni, Co, Fe, Pd, Pt, Cu and Au.

56. (Previously Presented) A method according to claim 52, wherein the impurity element belonging to Group 15 is at least one element selected from the group of elements consisting of P, N, As, Sb, and Bi.

57. (Previously Presented) A method according to claim 52, wherein said step of introducing the impurity element belonging to Group 15 is performed by plasma doping.

58. (Previously Presented) A method according to claim 56, wherein a dose of said phosphorous is set in a range from 1×10^{13} ions/cm² to 5×10^{14} ions/cm².

59. (Previously Presented) A method according to claim 56, wherein a concentration of said phosphorous is a digit higher than a concentration of said element which promotes crystallization.

60. (Withdrawn) A method of manufacturing a semiconductor device, comprising:
forming a base film over a substrate having an insulating surface;
forming a gate electrode over said base film;
forming a gate insulating film over said gate electrode;

forming an amorphous semiconductor film over said gate insulating film;
forming a film comprising nickel over said amorphous semiconductor film;
heating said amorphous semiconductor film thereby crystallizing said amorphous semiconductor film;
introducing an element for gettering said nickel into at least a region selected in a crystallized semiconductor film obtained by heating thereby crystallizing said amorphous semiconductor film;
heating said semiconductor film thereby gettering said nickel into the region selected in said crystallized semiconductor film;
patterning said crystallized semiconductor film thereby forming an active layer; and
forming a channel stopper over said active layer,
wherein said gate electrode comprises a material that is resistant to temperatures present during heating.

61. (Withdrawn) A method according to claim 60, wherein the step of heating during gettering is performed in the temperature range from 500 to 700°C.

62. (Withdrawn) A method according to claim 60, wherein the impurity element belonging to Group 15 is at least one element selected from the group of elements consisting of P, N, As, Sb, and Bi.

63. (Withdrawn) A method according to claim 60, wherein said step of introducing said element is performed by plasma doping.

64. (Withdrawn) A method according to claim 62, wherein a dose of said phosphorous is set in a range from 1×10^{13} ions/cm² to 5×10^{14} ions/cm².

65. (Withdrawn) A method according to claim 62, wherein a concentration of said phosphorous is a digit higher than a concentration of said nickel.

66. (Withdrawn) A method according to claims 1, 9, 17, 25, 45, 52 or 60 wherein said semiconductor device is an electroluminescent (EL) display device.

67. (Withdrawn) A method according to claims 1, 9, 17, 25, 45, 52 or 60 wherein said semiconductor device is a video camera.

68. (Withdrawn) A method according to claims 1, 9, 17, 25, 45, 52 or 60 wherein said semiconductor device is a still camera.

69. (Withdrawn) A method according to claims 1, 9, 17, 25, 45, 52 or 60 wherein said semiconductor device is a projector.

70. (Withdrawn) A method according to claims 1, 9, 17, 25, 45, 52 or 60 wherein said semiconductor device is a head mount display.

71. (Withdrawn) A method according to claims 1, 9, 17, 25, 45, 52 or 60 wherein said semiconductor device is a car navigation system.

72. (Withdrawn) A method according to claims 1, 9, 17, 25, 45, 52 or 60 wherein said semiconductor device is a personal computer.

73. (Withdrawn) A method according to claims 1, 9, 17, 25, 45, 52 or 60 wherein said semiconductor device is a mobile computer.

74. (Withdrawn) A method according to claims 1, 9, 17, 25, 45, 52 or 60 wherein said semiconductor device is a portable telephone.

75. (Previously Presented) A method according to claim 45, wherein the amorphous semiconductor film comprises germanium.

76. (Previously Presented) A method according to claim 1, wherein the element in the crystalline semiconductor island after the second heat treatment has a concentration in a range of 1×10^{18} atoms/cm³ or lower.

77. (Previously Presented) A method according to claim 9, wherein the element in the crystalline semiconductor island after the second heat treatment has a concentration in a range of 1×10^{18} atoms/cm³ or lower.

78. (Previously Presented) A method according to claim 17, wherein the element in the crystalline semiconductor island after the second heat treatment has a concentration in a range of 1×10^{18} atoms/cm³ or lower.

79. (Previously Presented) A method according to claim 25, wherein the element in the crystalline semiconductor island after the second heat treatment has a concentration in a range of 1×10^{18} atoms/cm³ or lower.

80. (Previously Presented) A method according to claim 45, wherein the element in the crystalline semiconductor island after the second heat treatment has a concentration in a range of 1×10^{18} atoms/cm³ or lower.

81. (Previously Presented) A method according to claim 52, wherein the element in the crystalline semiconductor island after the second heat treatment has a concentration in a range of 1×10^{18} atoms/cm³ or lower.

82. (Currently Amended) A method of manufacturing a semiconductor device including at least a thin film transistor, said method comprising the steps of:

- forming an amorphous semiconductor film on an insulating surface;
- providing the amorphous semiconductor film with an element which promotes crystallization of the amorphous semiconductor film;
- performing a first heat treatment to crystallize the amorphous semiconductor film;
- introducing an impurity element belonging to Group 15 into a first portion of the crystalline semiconductor film by using a mask while a second portion of the crystalline semiconductor film below the mask is not provided with the impurity element;

- wherein the first and second portions of the crystalline semiconductor film are in contact with the insulating surface over the substrate;

- performing a second heat treatment for gettering so that the element contained in the first portion is moved to the second portion in a direction parallel to the insulating surface;

- patterning the crystallized semiconductor film to form a crystalline semiconductor island in the second portion thereby removing the first portion of the crystalline semiconductor film; and

- forming an active layer of the thin film transistor using the crystalline semiconductor island.

83. (Previously Presented) A method according to claim 82, wherein the crystalline semiconductor film has grain boundaries.

84. (Previously Presented) A method according to claim 82, wherein the second heat treatment is performed in the temperature range from 500 to 700°C.

85. (Previously Presented) A method according to claim 82, wherein the second heat treatment is furnace annealing.

86. (Previously Presented) A method according to claim 82, wherein the element which promotes crystallization is at least one element selected from the group of elements consisting of Ni, Co, Fe, Pd, Pt, Cu and Au.

87. (Previously Presented) A method according to claim 82, wherein the impurity element belonging to Group 15 is at least one element selected from the group of elements consisting of P, N, As, Sb, and Bi.

88. (Currently Amended) A method of manufacturing a semiconductor device including at least a thin film transistor, said method comprising the steps of:

- forming an amorphous semiconductor film on an insulating surface;
- providing the amorphous semiconductor film with an element which promotes crystallization of the amorphous semiconductor film;
- performing a first heat treatment to crystallize the amorphous semiconductor;
- irradiating a laser light or an intense light to the crystalline semiconductor film;
- introducing an impurity element belonging to Group 15 into a first portion of the crystalline semiconductor film by using a mask after the irradiating step, while a second portion of the crystalline semiconductor film below the mask is not provided with the impurity element;
- wherein the first and second portions of the crystalline semiconductor film are in contact with the insulating surface over the substrate;
- performing a second heat treatment for gettering so that the element contained in the second portion is moved to the first portion in a lateral direction to the insulating surface;
- patterning the crystalline semiconductor film to form a crystalline semiconductor island in the second portion thereby removing the ~~first~~second portion of the crystalline semiconductor film; and

forming an active layer of the thin film transistor using the crystalline semiconductor island.

89. (Previously Presented) A method according to claim 88, wherein the crystalline semiconductor film has grain boundaries.

90. (Previously Presented) A method according to claim 88, wherein the second heat treatment is performed in the temperature range from 500 to 700°C.

91. (Previously Presented) A method according to claim 88, wherein the second heat treatment is furnace annealing.

92. (Previously Presented) A method according to claim 88, wherein the element which promotes crystallization is at least one element selected from the group of elements consisting of Ni, Co, Fe, Pd, Pt, Cu and Au.

93. (Previously Presented) A method according to claim 88, wherein the impurity element belonging to Group 15 is at least one element selected from the group of elements consisting of P, N, As, Sb, and Bi.

94. (Currently Amended) A method of manufacturing a semiconductor device including at least a thin film transistor, said method comprising the steps of:

- forming an amorphous semiconductor film on an insulating surface;
- providing the amorphous semiconductor film with an element which promotes crystallization of the amorphous semiconductor film;
- performing a first heat treatment to crystallize the amorphous semiconductor film;

introducing an impurity element belonging to Group 15 into a first portion of the crystalline semiconductor film by using a mask while a second portion of the crystalline semiconductor film below the mask is not provided with the impurity element;

wherein the first and second portions of the crystalline semiconductor film are in contact with the insulating surface over the substrate;

performing a second heat treatment for gettering so that the element contained in the second portion is moved to the first portion in a direction parallel to the insulating surface;

forming a crystalline semiconductor island by removing the first portion and a part of the second portion; and

forming an active layer of the thin film transistor using the crystalline semiconductor island.

95. (Previously Presented) A method according to claim 94, wherein the crystalline semiconductor film has grain boundaries.

96. (Previously Presented) A method according to claim 94, wherein the second heat treatment is performed in the temperature range from 500 to 700°C.

97. (Previously Presented) A method according to claim 94, wherein the second heat treatment is furnace annealing.

98. (Previously Presented) A method according to claim 94, wherein the element which promotes crystallization is at least one element selected from the group of elements consisting of Ni, Co, Fe, Pd, Pt, Cu and Au.

99. (Previously Presented) A method according to claim 94, wherein the impurity element belonging to Group 15 is at least one element selected from the group of elements consisting of P, N, As, Sb, and Bi.

100. (Currently Amended) A method of manufacturing a semiconductor device including at least a thin film transistor, said method comprising the steps of:

- forming an amorphous semiconductor film on an insulating surface;
- providing the amorphous semiconductor film with an element which promotes crystallization of the amorphous semiconductor film;
- performing a first heat treatment to crystallize the amorphous semiconductor;
- irradiating a laser light or an intense light to the crystalline semiconductor film;
- introducing an impurity element belonging to Group 15 into a first portion of the crystalline semiconductor film by using a mask after the irradiating step, while a second portion of the crystalline semiconductor film below the mask is not provided with the impurity element;
- wherein the first and second portions of the crystalline semiconductor film are in contact with the insulating surface over the substrate;
- performing a second heat treatment for gettering so that the element contained in the second portion is moved to the first portion in a lateral direction to the insulating surface;
- forming a crystalline semiconductor island by removing the first portion and a part of the second portion; and
- forming an active layer of the thin film transistor using the crystalline semiconductor island.

101. (Previously Presented) A method according to claim 100, wherein the crystalline semiconductor film has grain boundaries.

102. (Previously Presented) A method according to claim 100, wherein the second heat treatment is performed in the temperature range from 500 to 700°C.

103. (Previously Presented) A method according to claim 100, wherein the second heat treatment is furnace annealing.

104. (Previously Presented) A method according to claim 100, wherein the element which promotes crystallization is at least one element selected from the group of elements consisting of Ni, Co, Fe, Pd, Pt, Cu and Au.

105. (Previously Presented) A method according to claim 100, wherein the impurity element belonging to Group 15 is at least one element selected from the group of elements consisting of P, N, As, Sb, and Bi.

106. (Previously Presented) A method according to claim 1, wherein the element which promotes crystallization is provided with the amorphous semiconductor layer by introducing into the amorphous semiconductor film or applying a layer containing the element to the amorphous semiconductor film.

107. (Previously Presented) A method according to claim 9, wherein the element which promotes crystallization is provided with the amorphous semiconductor layer by introducing into the amorphous semiconductor film or applying a layer containing the element to the amorphous semiconductor film.

108. (Previously Presented) A method according to claim 17, wherein the element which promotes crystallization is provided with the amorphous semiconductor layer by introducing into the amorphous semiconductor film or applying a layer containing the element to the amorphous semiconductor film.

109. (Previously Presented) A method according to claim 25, wherein the element which promotes crystallization is provided with the amorphous semiconductor layer by introducing into the amorphous semiconductor film or applying a layer containing the element to the amorphous semiconductor film.

110. (Previously Presented) A method according to claim 45, wherein the element which promotes crystallization is provided with the amorphous semiconductor layer by introducing into the amorphous semiconductor film or applying a layer containing the element to the amorphous semiconductor film.

111. (Previously Presented) A method according to claim 52, wherein the element which promotes crystallization is provided with the amorphous semiconductor layer by introducing into the amorphous semiconductor film or applying a layer containing the element to the amorphous semiconductor film.

112. (Previously Presented) A method according to claim 82, wherein the element which promotes crystallization is provided with the amorphous semiconductor layer by introducing into the amorphous semiconductor film or applying a layer containing the element to the amorphous semiconductor film.

113. (Previously Presented) A method according to claim 88, wherein the element which promotes crystallization is provided with the amorphous semiconductor layer by introducing into the amorphous semiconductor film or applying a layer containing the element to the amorphous semiconductor film.

114. (Previously Presented) A method according to claim 94, wherein the element which promotes crystallization is provided with the amorphous semiconductor layer by introducing into the amorphous semiconductor film or applying a layer containing the element to the amorphous semiconductor film.

115. (Previously Presented) A method according to claim 100, wherein the element which promotes crystallization is provided with the amorphous semiconductor layer by

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introducing into the amorphous semiconductor film or applying a layer containing the element to the amorphous semiconductor film.